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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/691,174 | 10/19/2000 | Tomas Hedberg | 040010-554 | 4248 |

7590 06/09/2004
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|---------------|
| EXAMINER |
| CORSARO, NICK |

| | |
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| ART UNIT | PAPER NUMBER |
| 2684 | |

DATE MAILED: 06/09/2004

Handwritten number 8

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/691,174

Applicant(s)

HEDBERG, TOMAS

Examiner

Nick Corsaro

Art Unit

2684

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 October 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,6-8,17,18 and 22-24 is/are rejected.
- 7) ☒ Claim(s) 3-5,9-16,19-21 and 25-32 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 October 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 5 and 7.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The abstract of the disclosure is objected to because the abstract is too long. Correction is required. See MPEP § 608.01(b).
2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Waylett et al. (6,269,255) in view of Csapo et al. (6,411,825).

Consider claim 1, Waylett discloses a method for controlling power in a wireless communication system having a base station (180, figure 1) and a Power Amplifier (PA) (110, figure 1) split into at least two separate units (see col. 4 lines 15-41, col. 3 lines 48-54, col. 3

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lines 63-67, and col. 4 lines 1-15, where Waylett discusses base stations having modular amplifier units separated from the base and connected by coaxial lines, for ease of modification or repair, including power control). Waylett discloses coupling the at least two separate units with an interface (see col. 4 lines 23-41, where Waylett discusses a several transmission lines and control lines between the modular units). Waylett discloses providing an aggregate signal representing one or more carrier signals across the interface from the base station to the PA (see col. 4 lines 29-42, col. 4 lines 55-67, col. 5 lines 60-65, and col. 6 lines 18-25, where Waylett discusses plural signals fed to the amplifier). Waylett discloses measuring a gain level inherently during an interval, and feeding back information across the interface from the PA to the base station associated with the measured gain level (see col. 4 lines 20-41, col. 4 lines 55-65, and col. 5 lines 8-17, where Waylett discusses a power control feedback loop where power level is measured and stored during some interval of the base station processes).

Waylett discloses multiple signals being fed to the amplifier unit, and says any type of suitable amplifier could be used (col. 4 lines 55-65, col. 6 lines 18-25), however, does not specifically disclose a multiple carrier amplifier (MCPA). Csapo teaches a multiple carrier power amplifier (see col. 3 lines 24-26).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Waylett, and use a multiple carrier power amplifier, as taught by Csapo, thus reducing the number of antennas necessary for transmitting multiple RF carriers, as discussed by Csapo (col. 3 lines 23-27).

Consider claim 17, Waylett discloses an apparatus for controlling power in a wireless communication system (see col. 4 lines 15-41, col. 3 lines 48-54, col. 3 lines 63-67, and col. 4

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lines 1-15). Waylett discloses an interface (see col. 4 lines 20-41, and col. 3 lines 39-67, where Waylett discusses a signal and control connection between the a amplifier unit and a base station). Waylett discloses a base station (see col. 3 lines 47-67). Waylett discloses Power Amplifier (PA), the base station and the PA being split into at least two separate units coupled through the interface (see col. 4 lines 15-41, col. 3 lines 48-54, col. 3 lines 63-67, and col. 4 lines 1-15, where Waylett discusses base stations having modular amplifier units separated from the base and connected by coaxial lines, for ease of modification or repair, including power control). Waylett discloses the PA configured to receive an aggregate signal across the interface from the base station to the PA, the aggregate signal inherently representing one or more carrier signals (see col. 4 lines 29-42, col. 4 lines 55-67, col. 5 lines 60-65, and col. 6 lines 18-25, where Waylett discusses plural transmit signals fed to the power amplifier and antenna, where the transmit signals fed to a power amp are already unconverted on a carrier). Waylett discloses measure a gain level inherently during an interval; and feed back information across the interface from the PA to the base station associated with the measured gain level (see col. 4 lines 20-41, col. 4 lines 55-65, and col. 5 lines 8-17, where Waylett discusses a power control feedback loop where power level is measured and stored during some interval of the base station processes).

Waylett discloses multiple signals being fed to the amplifier unit, and says any type of suitable amplifier could be used (col. 4 lines 55-65, col. 6 lines 18-25), however, does not specifically disclose a multiple carrier amplifier (MCPA). Csapo teaches a multiple carrier power amplifier (see col. 3 lines 24-26).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Waylett, and use a multiple carrier power amplifier, as

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taught by Csapo, thus reducing the number of antennas necessary for transmitting multiple RF carriers, as discussed by Csapo (col. 3 lines 23-27).

5. Claims 2 and 18, are rejected under 35 U.S.C. 103(a) as being unpatentable over Waylett in view of Csapo as applied to claims 1 and 17 above, and further in view of Santa et al. (6,256,502).

Consider claims 2 and 18, Waylett and Csapo discloses adjusting the gain level of the PA to maintain a power level associated with the signals (see Waylett col. 4 lines 15-67 and col. 5 lines 8-17). Waylett and Csapo do not specifically disclose maintaining a linear power level associated with the aggregate signal. Santa teaches maintaining a linear power level associated with the aggregate signal (see col. 1 lines 5-13, col. 4 lines 1-14, col. 5 lines 34-67, col. 6 lines 3-17, col. 6 lines 65-67, and col. 7 lines 1-12). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Waylett and Csapo, and maintaining a linear power level associated with the aggregate signal, as taught by Santa, thus allowing reduced noise in the system, as discussed by Santa (col. 2 lines 1-17).

6. Claims 6 and 22, are rejected under 35 U.S.C. 103(a) as being unpatentable over Waylett in view of Csapo as applied to claims 1 and 17 above, and further in view of Onoda et al. (6,038,432).

Consider claims 6 and 22, Waylett and Csapo disclose a power control feedback loop wherein the power is measured during an interval. Waylett and Csapo do not specifically disclose the interval corresponds to a synchronous interval. Onoda teaches the interval corresponds to a synchronous interval (see col. 7 lines 10-21). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of

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Waylett and Csapo, and have the interval corresponds to a synchronous interval, as taught by Onoda, thus allowing detection of an abnormal power output, as discussed by Onoda (col. 2 lines 65-67 and col. 3 lines 1-20).

7. Claims 7 and 23, are rejected under 35 U.S.C. 103(a) as being unpatentable over Waylett in view of Csapo as applied to claims 1 and 17 above, and further in view of Neitiniemi et al. (6,711,388).

Consider claims 6 and 23, Waylett and Csapo disclose a power control feedback loop wherein the power is measured during an interval. Waylett and Csapo do not specifically disclose the interval corresponds to an asynchronous interval. Neitiniemi teaches the interval corresponds to an asynchronous interval (see col. 6 lines 5-27). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Waylett and Csapo, and have the interval corresponds to an asynchronous interval, as taught by Neitiniemi, thus allowing quick adjustment of power levels, as discussed by Neitiniemi (col. 2 lines 44-50).

8. Claims 8 and 24, are rejected under 35 U.S.C. 103(a) as being unpatentable over Waylett in view of Csapo as applied to claim 1 and 17 above, and further in view of Kasamatsu et al. (5,852,770).

Consider claims 8 and 24, Waylett and Csapo disclose a power control feedback loop wherein the power is measured during an interval. Waylett and Csapo do not specifically disclose the interval corresponds to a time slot interval. Kasamatsu teaches the interval corresponds to a time slot interval (see col. 4 lines 5-40, col. 3 lines 65-67, and col. 4 lines 1-7). It would have been obvious to one of ordinary skill in the art at the time the invention was made

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to modify the invention of Waylett and Csapo, and have the interval corresponds to a time slot interval, as taught by Kasamatsu, thus allowing power control to be executed correctly when time slotted transmissions are used, as discussed by Kasamatsu (col. 2 lines 35-41).

Allowable Subject Matter

9. Claims 3-5, 9-16, 19-21, and 25-32 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

(6,223,056), Appel discloses a split base station system with power control.

11. Any inquiry concerning this communication should be directed to Nick Corsaro at telephone number (703) 306-5616.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay Maung, can be reached at (703) 308-7745. Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

Or faxed to:

(703) 872-9314 (for Technology center 2600 only)

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Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth, Floor (Receptionist). Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 customer Service Office whose telephone number is (703) 306-0377.

Nick Corsaro

Primary Examiner

